



## PRODUCT APPROVAL SHEET

<b>Product Description:</b>	27" GG RP Touch Panel
<b>Customer Name:</b>	
<b>Customer Part No.:</b>	
<b>Dignity Part No.:</b>	DY2702W-5142
<b>Date:</b>	2023.5.31

Customer Approval	
R&D Dept.	Q&A Dept.

Designed by	Checked by
LYQ	MURPHY

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### History of Version

Ver.	Date	Description	Page	Revised by
A00	2023.05.31	New Version		

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## 1 Warranty

The warranty specified applies to Dignity's line of projected capacitive touch screens. The period of this warranty is defined as one [1] year from the date of shipment of the product. The warranty is considered to be null and void in case of the following:

- Failure to follow the use, storage, handling, operation or other aspects as outlined by this document and leading to product failure are not covered under warranty.
- Physical damage to the touch screen (breakage, cracking, etc.) that date from after the shipment of the product.
- Accidental or Intentional Vandalism, Neglect or Force Majeure.
- Damage resulting from improperly conducted installation, secondary manufacturing activities or assembly.
- Warranty is only limited to the products provided by Dignity; Dignity makes no additional warranty, and are not responsible for any other direct or indirect loss caused by our product's failure.
- All non-conforming or defective products should be reported in writing as per our standard RMA procedure.

## 2 Application

The product is a projected capacitive touch panel used as the input devices for general electric appliances and OA equipment.

## 3 Main Characteristics

Item	Specification	Unit&Remark
Cover Lens Material	Heat tempered glass, T=1.8mm	/
Sensor Material	ITO Glass, T=1.1mm	/
Tail type	FPC, Gold-Plated	
Total Thickness	3.20±0.35	mm
Dimensional Outline	644.20 (L) × 388.40 (W)	mm
Viewing Area	598.40 (L) × 337.00 (W)	mm
FPC Length	128.50	mm
IC	ACDC, AM126B	Please refer to the IC data sheet for IC specifications
Firmware	DY__150_27.0_V0.5	/
Touch point	10	The number of touch points simultaneously detect
Interface	USB	2.0pitch-5pin
Max voltage	DC 5V max	
Cover Lens Hardness	≥7H	Pressure 500gf test
Transmittance	≥85%	Visible light at 550nm

#### 4 Environmental Characteristics

Items	Specification		Criteria &Remark
Operating temperature & Humidity	-10°C~+60°C	-10°C~+40°C / 10%-60%RH	Panel only, Non-condensing
		+40°C~+60°C / 10%-60%RH	
Storage temperature & Humidity	-20°C~+70°C	-20°C~+60°C / 10%-90%RH	
		+60°C~+70°C / 10%-60%RH	
Heat Resistance	70°C*240H, After the test, stand for 24 hours at normal temperature for inspection		Product function is normal
Cold Resistance	-20°C*240H, After the test, stand for 24 hours at normal temperature for inspection		Product function is normal
Temperature and Humidity Resistance	60°C*90%RH*240H, After the test, stand for 24 hours at normal temperature for inspection		Product function is normal
Thermal Shock	-20°C (30min) ⇔ 70°C (30min) 20 cycles, After the test, stand for 24 hours at normal temperature for inspection		Product function is normal
<p>Remark:</p> <ol style="list-style-type: none"> <li>1. Touch panel reliability testing should be conducted after assembly into touch panel, on a flat surface and in an unpowered state.</li> <li>2. Reliability testing should be conducted in room temperature conditions (23°C±5°C, 65%RH±10%RH and 860-1060hPa), unless otherwise previously specified.</li> <li>3. If operating (powered) environmental testing is required, the panel should be assembled into the final product enclosure. Unassembled touch panels are not suited to powered environmental testing.</li> </ol>			

## 5 Appearance Inspection

### 5.1 Inspection Regulation

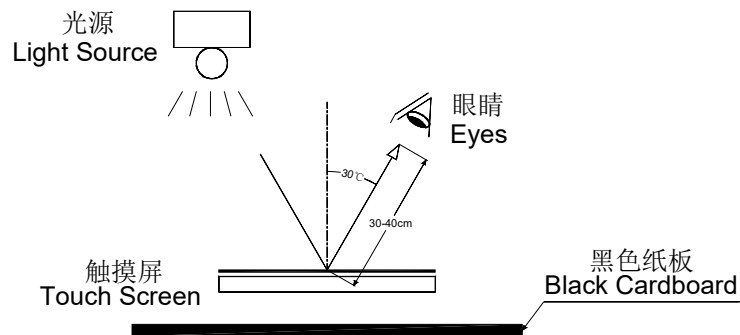
#### 5.1.1 Inspection Scope:

This standard applies only to visible areas. All areas outside of viewing area which will not influence product performance and all stains which can be wiped away by using neutral detergent or isopropyl alcohol and a wipe will not be regarded as a defect.

Visible Area Definition: the visible area after customer assembly into enclosure (generally defined as the viewing window on the front side of the glass); the cover glass's visual area includes the silk-screened border on the front of the cover glass frame and the cover glass window's viewing window.

#### 5.1.2 Inspection Condition:

Staff is 1.0 and above visual acuity in healthy adults (including those using glasses). Source of the lighting for inspection is 20-40 W cool white color fluorescent light ( Required inspection table's illumination between 500 ~ 1000 Lux ), and viewing distance for inspection between eyes and product is maintained at 30-40cm. Meanwhile, add black and white cardboard under the product as background. Inspection time is less than 12 sec for each piece as the following:



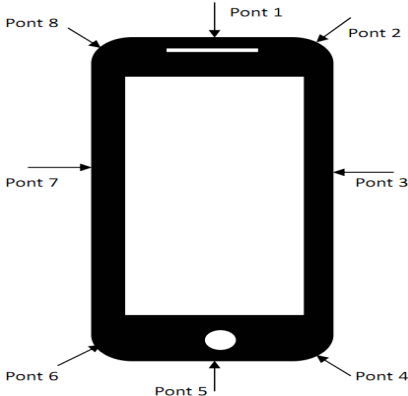
## 5.2 Dot Defects

Criteria (mm)		Decision
Different color points(bubble)	$\Phi \leq 0.4$	Excluded, but cannot be concentrated
	$0.4 < \Phi \leq 0.5$	8
	$0.5 < \Phi \leq 0.6$	6
	$0.6 < \Phi \leq 0.8$	3
	$\Phi > 0.8$	0
Note: any two acceptable defects spacing requirement $\geq 20$		

## 5.3 Linear Defects

Criteria (mm)		Decision
W	L	
$W \leq 0.1$	/	Excluded, but cannot be concentrated
$0.1 < W < 0.15$	$L \leq 30$	
$0.15 \leq W \leq 0.20$	$L \leq 50$	6
$W > 0.20$	/	According to the dot standard
Note: any two acceptable defects spacing requirement $\geq 20$		

## 5.4 Cover Lens Criteria

Item	Criteria (mm)
Logo Printing Tilt Angle	$L \leq 10, A \leq 3^\circ$ ; $10 < L \leq 20, A \leq 1.5^\circ$
Flatness	<p>The degree (height) of warping accepted in any direction or plane: <math>H \leq 0.25\%</math>, OK ; <math>H &gt; 0.25\%</math>, NG.</p> 
BM Printing Area	Printing area has obvious light-leaking phenomenon caused by scratching is not acceptable.
	Printing pinhole/transmission: $\Phi \leq 0.30$ is acceptable; regardless of the number, but not allowed to be concentrated.
	Cover printing edge raised or indented, width is not more than 0.2 is acceptable.
	Cover printing in the dirt, the shadow, is not acceptable; may refer to limit sample.
LOGO Printing	Color, font, position, size conform to the requirements of the drawings or samples.
	Even transmission of light; refer to limit sample.
	There shall be no ghosting, defect; refer to limit sample.
CNC edge serrated	Glass CNC edge serrated, Depth $H \leq 0.50$ is acceptable.

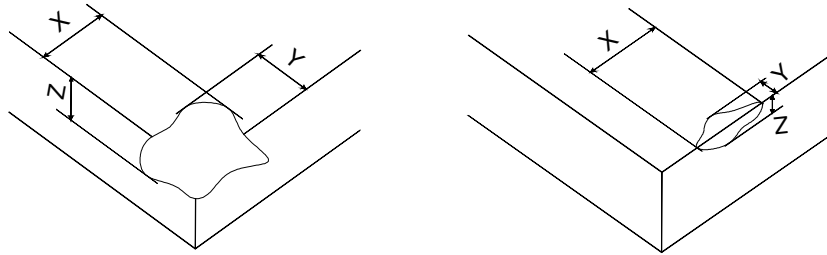


## 5.5 Cover Lens Chipping

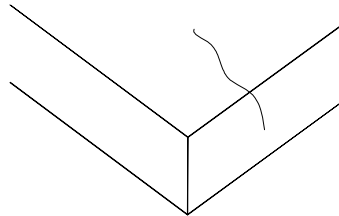
Edge and corner of the front fragment, does not allow;

Corner fragment:  $X \leq 2.0\text{mm}$  ,  $Y \leq 1.5\text{mm}$  and  $Z \leq 1/2GT$ , viewed from the front is light-leaking, acceptable number per side for three, more than 20 mm spacing requirements.

(Remark: If the chipping seriously affects the product's features, T / P is non-conforming.)



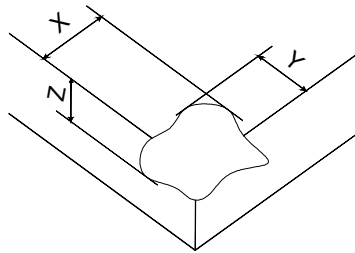
Cracking: T/P is regarded as defective.



## 5.6 Sensor Chipping

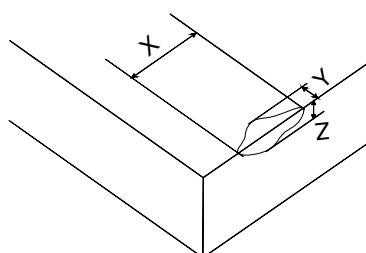
Corner fragment:  $X \leq 3.0\text{mm}$  ,  $Y \leq 3.0\text{mm}$  and  $Z \leq GT$ , it is ignored.

(Remark: If the chipping seriously affect the product's features, T / P is non-conforming.)

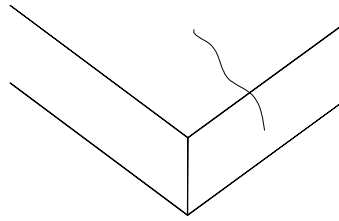


Side fragment:  $X \leq 4.0\text{mm}$  ,  $Y \leq 2.0\text{mm}$  and  $Z \leq GT$  it is ignored.

(Remark: If the chipping seriously affect the product's features, T / P is non-conforming.)



Cracking: T/P is regarded as defective.



## 5.7 Other

This specification is considered as basic on the products, but details are subject to discussion upon individual customer requirement.

## 6 Reliability Test

### 6.1 FPC Peeling Strength Test

X: 1000g (peeling by 180°)

Y: 500g (peeling upward by 90°)

Z: 150g (peeling for being vertical with x and y direction)

Note: speed 25mm/min.

### 6.2 FPC Bending Resistance Test

Bending 3 times or more by bending radius R1mm. The requirements in the item "4.2 Electric characteristics" shall be satisfied.

### 6.3 FPC Pluggable Resistance Test

Inserting and removing the FPC from connector at least 5 times. The requirements in "4.2 Electric characteristics", "Operation force" of the item "4.3 Mechanical characteristics" and "4.4 Light transparency" shall be satisfied.

### 6.4 Impact Resistance Test

Using a 227g,  $\Phi$ 38mm ball, that is dropped from a vertical height of 50cm height to the of the product once, the glass is not broken or damaged.

## **6.5 Packaging Drop Test**

No damage to the product when the biggest side of package is dropped 2 times from 50cm height (once each on upper and lower surfaces).

(Remark: This item only describes standard testing protocol. Testing is carried out in accordance with customer special requirements, and different product structures and thicknesses.)

## **7 Product Handling and Usage Instructions**

Projected capacitive touch screens are composed primarily of glass and as such should be handled with caring during all stages of storage, assembly, cleaning, etc. The product should not be dropped or handled roughly; all work surfaces should be kept clean and free of dust and dirt to prevent scratching. To avoid product damage or malfunction, please adhere to the directions below.

### **7.1 Storage**

7.1.1 We suggest the product should be kept at a temperature of  $23\pm 3^{\circ}\text{C}$  and humidity of 40%~70%RH. The product storage period should not be more than 6 months.

7.1.2 It is suggested to keep the materials no more than 3 months in normal conditions (indoors, normal heat and humidity conditions).

7.1.3 Touch panel should be kept away from chemicals such as acidic or alkaline products, as the damage occurring from contact could affect touch panel function. Touch panels should never be stored in an environment where condensation can form.

7.1.4 Do not store a touch panel in direct sunlight.

7.1.5 Touch screens should be stored in original packaging.

### **7.2 Cleaning**

7.2.1 When cleaning the touch panel, refrain from using any kind of strongly acidic, alkaline or organic chemical solvent.

7.2.2 In case the panel requires cleaning, the use of neutral detergent or isopropyl alcohol is suggested.

7.2.3 When cleaning the touch panel, always use a soft cloth to avoid abrasions.

### **7.3 Handling and Assembly**

7.3.1 When handling the panel, gloves are recommended both to avoid fingerprints, dirt or particles from adhering to the glass and also to avoid injury to the handler from sharp edges.

7.3.2 When handling the panel, hold it by the edge of the glass with the sensor facing upwards in order to avoid the sensor becoming scratched or dirty.

7.3.3 The panel should be handled by its edges and contact with the viewing area should be avoided in order to avoid affecting product transparency or display transmission.

7.3.4 When assembling the glass panel, do not use excessive force to bend or twist the panel; this may result in the panel becoming deformed.

7.3.5 When handling the FPC or COF, excessive pulling force, strain or tension must be avoided in order to prevent damage or product defects.

7.3.6 Once removed from the original package, touch screens are not to be stacked. The edges may cause scratching.

7.3.7 Do not stack heavy objects on the touch screen.

### **7.4 Operation**

7.4.1 The panel must be operated in a stable environment; abrupt change of the environmental conditions may cause the malfunction of the panel.

7.4.2 In order to guarantee stable performance of all functions of a touch panel, please make sure that system is grounded or a power adapter is connected correctly to ground loop (Connection to earth ground is suggested).

7.4.3 Do not insert or remove the interface connector while the touch panel is operating.

7.4.4 Please avoid any sharp edged or hard objects hitting the touch panel when in operation.

## 8 Product Coding Rules

$\frac{DY}{A} \quad \frac{XXX}{B} \quad \frac{X}{C} \quad \frac{X}{D} \quad - \quad \frac{XXXX}{E}$

### Notes:

A: Dignity Company Code

B: Product Size (In Diagonal Inches)

C: Product Structure (PG=1 / GG=2)

D: Product Viewing Area Proportion (S = Standard / W = Wide Format)

E: Product Model Number

For Example: "DY2152W-1471" means a 21.5-inch widescreen projected capacitive GG screen produced by Dignity, model number 1471.

## 9 Attachment

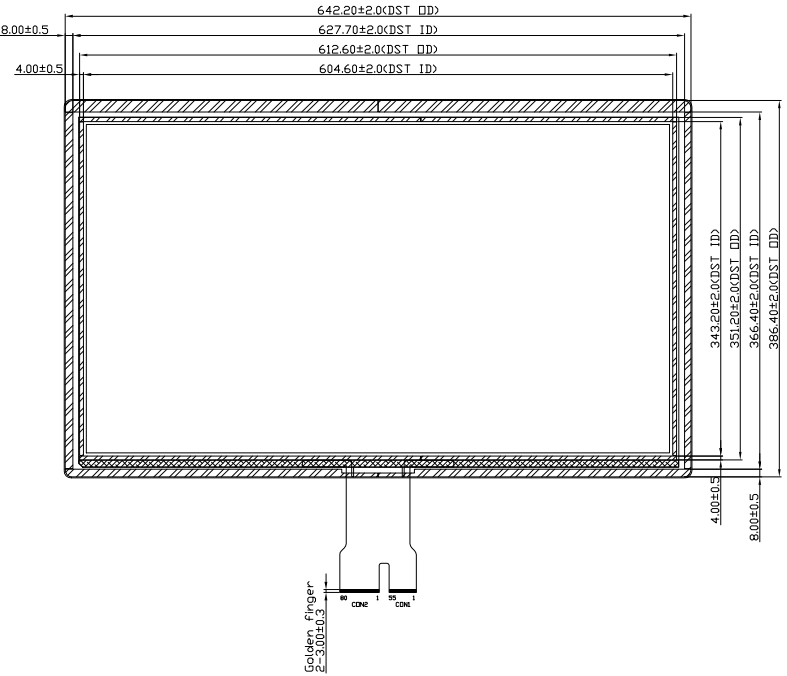
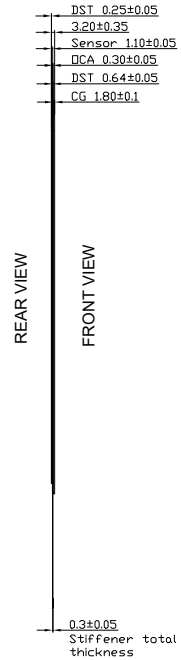
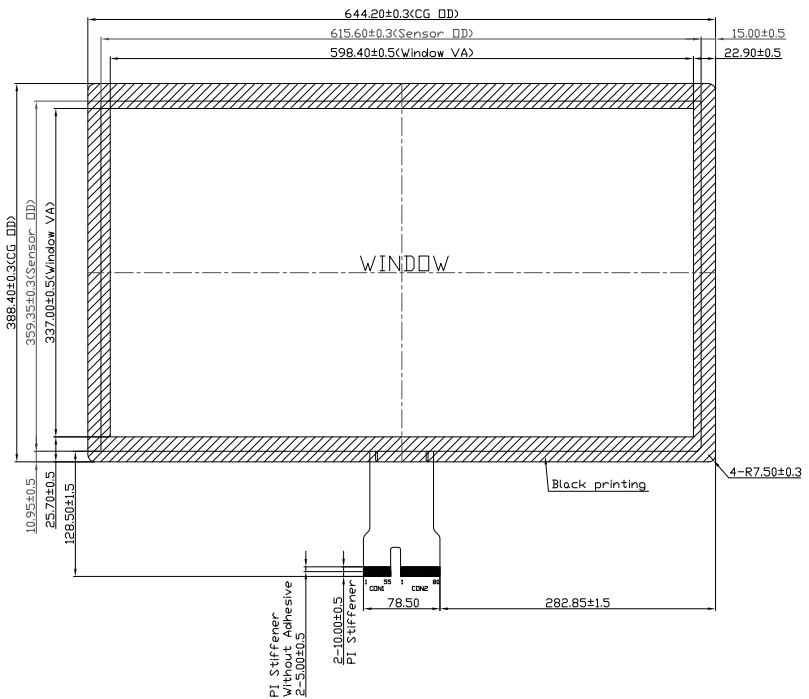
### 9.1 Engineering drawing

MARK	HISTORY		NAME	DATE	MARK	HISTORY		NAME	DATE
△					△				
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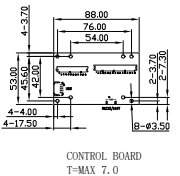
FRONT VIEW

SIDE VIEW

REAR VIEW



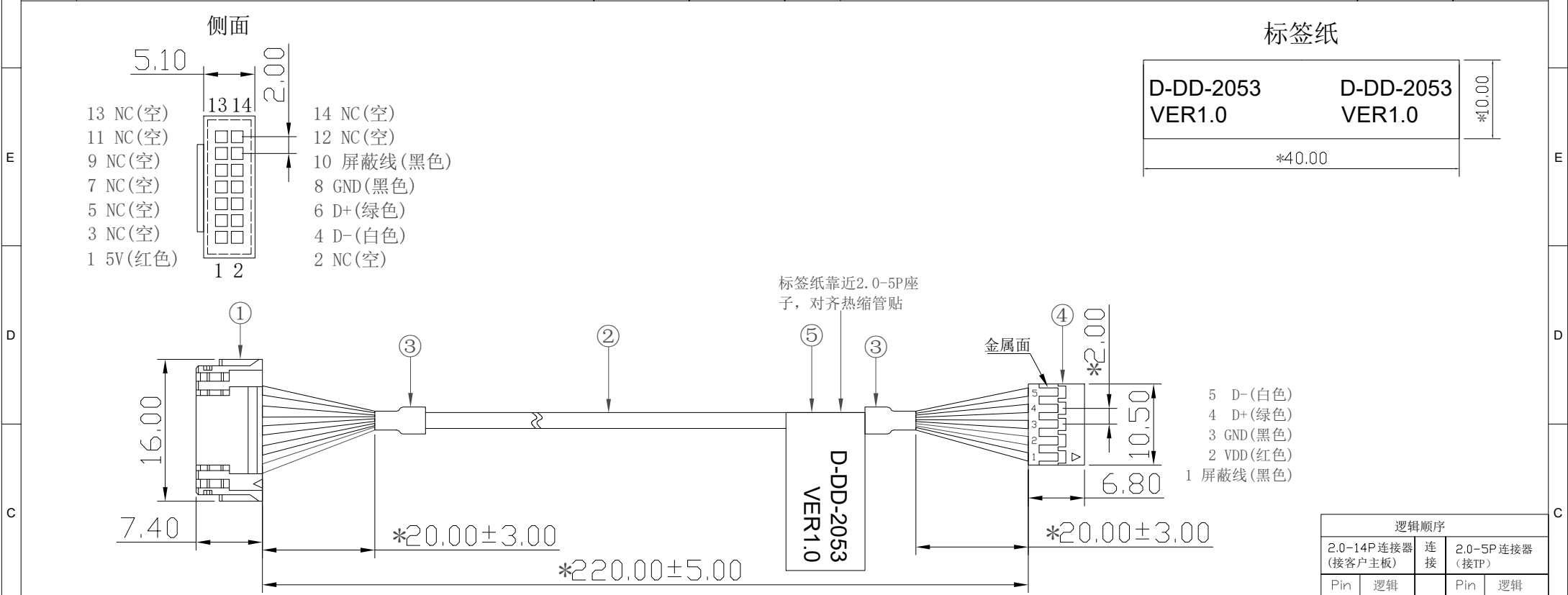
- Notes:
- Operating Temperature: -10°C ~ +60°C ;  
Storage Temperature: -20°C ~ +70°C .
  - Hardness ≥ 7H.
  - Transparency ≥ 85%.
  - Unspecified Tolerance: ± 0.5.
  - ROHS Compliance.



PIN ASSIGNMENT			
USB		UART/RS232	
Pin	Name	Pin	Name
1	GND	1	GND
2	VDD	2	VDD
3	GND	3	TX
4	D+	4	RX
5	D-		

DY2702W-5142				Customer Part No.	SHEET	UNIT	SCALE	ver.1
				27inch	A4	mm	1:1	
DESIGN	MURPHY	DATE	2022.05.17	广东德怡电子科技有限公司 GUANGDONG DIGNITY TECHNOLOGY CO.,LTD				
CHECK		DATE						

8	7	6	5	4	3	2	1
标识	更改内容		签名	日期	标识	更改内容	
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说明:

- 注意接线的颜色。
- 符合“ROHS”与“REACH”标准
- 未注公差: ±1.0。

编号	规格说明	单位	单用量	备注
①	连接器: PHDC2X7带锁	PCS	1	
②	UL2725 26AWG×2C+28AWG×2C USB2.0 (字印须有: AWM 2725 80°C 30V VW-1) (外径φ3.5mm)	PCS	1	
③	热缩套管	PCS	2	
④	连接器: 2.0-5PIN HOUSING 白色插头 JIANHANG ELECTRONIC	PCS	1	
⑤	防水标签纸: 40mmX10mm(油光面防撕裂)	PCS	1	

USB线2.0pitch*14p带扣 -2.0pitch*5p(220mm)		纸张		A4	比例	ver.1
工程图(D-DD-2053)		共1张	第1张	mm	1:1	
设计	ZJT	日期	2022.08.29	广东德怡电子科技有限公司		
审核		日期		GUANGDONG DIGNITY TECHNOLOGY CO.,LTD		